

1            BLOCK CODING FOR MULTILEVEL DATA COMMUNICATION

2            ABSTRACT

3    Methods, apparatus and systems for multilevel data communication comprises dividing a  
4    set of information bits to be transmitted into a first group and a second group; encoding  
5    the first group to generate a block code, selecting a subset of symbols in a constellation of  
6    symbols in dependence on the block code according to a Gray-coded mapping function,  
7    selecting a symbol within the subset in dependence on the second group according to a  
8    Gray-coded mapping function, and transmitting the selected symbol.